

FOR UTILITY/DESIGN  
CIP/PCT NATIONAL/PLANT  
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL  
DECLARATIONS



RULE 63 (37 C.F.R. 1.63)  
DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S  
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED GENETIC INHIBITION BY DOUBLE-STRANDED RNA

the specification of which (CHECK applicable BOX(ES) )  
X ☒ is attached hereto.  
BOX(ES) ☒ was filed on December 18, 1998 as U.S. Application No. 09/ 215,257  
☐ was filed as PCT International Application No. PCT/ / on

and (if applicable to U.S. or PCT application) was amended on

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S) Number	Country	Day/MONTH/Year Filed	Date first Laid- open or Published	Date Patented or Granted	Priority Claimed Yes No
--	---------	----------------------	---------------------------------------	-----------------------------	----------------------------

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S) Application No. (series code/serial no.)	Day/MONTH/Year Filed	Status pending, abandoned, patented	Priority Claimed Yes No
60/068,562	23/DECEMBER/1997	pending	X

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

Paul N. Kokulis	16773	David W. Brinkman	20817	G. Paul Edgell	24238	Richard H. Zaitlen	27248
Raymond F. Lippitt	17519	Donald J. Bird	25323	Lynn E. Eccleston	35861	Roger R. Wise	31204
G. Lloyd Knight	17698	Peter W. Gowdey	25872	Timothy J. Klima	34852	Jay M. Finkelstein	21082
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William K. West, Jr.	22057	Glenn J. Perry	28458	Stephen C. Glazier	31361	W. Patrick Bengtsson	32456
Kevin E. Joyce	20508	Kendrew H. Colton	30368	Paul F. McQuade	31542		
George M. Sirilla	18221	Michelle N. Lester	32331	Ruth N. Morduch	31044		

(1) INVENTOR'S SIGNATURE: Andrew J. Fire Date: 15 January 1999

Andrew		FIRE	
First	Middle Initial	Family Name	
Residence	Baltimore	Maryland	U.S.A.
City	State/Foreign Country		Country of Citizenship
Post Office Address	2320 Bright Leaf Way, Baltimore, Maryland		
(include Zip Code)	21209		

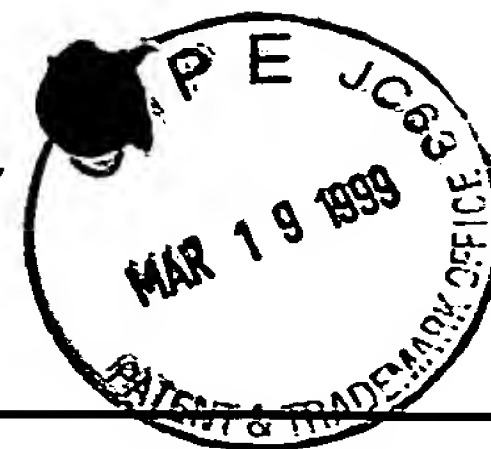
(2) INVENTOR'S SIGNATURE:

Date:

Si		XU	
First	Middle Initial	Family Name	
Residence	Ballwin	Missouri	China
City	State/Foreign Country		Country of Citizenship
Post Office Address	1755 Warmington Court, Ballwin, Missouri		
(include Zip Code)	63021		

(FOR ADDITIONAL INVENTORS, check box ☒ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)

DECLARATION AND POWER OF ATTORNEY  
(continued)  
ADDITIONAL INVENTORS



(3) INVENTOR'S SIGNATURE:

Date:

	Mary	K.	Montgomery
	First	Middle Initial	Family Name
Residence	St. Paul	Minnesota	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota		
(include Zip Code)	55105		

(4) INVENTOR'S SIGNATURE:

Date:

	Stephen	A.	KOSTAS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland		
(include Zip Code)	21212		

(5) INVENTOR'S SIGNATURE:

Date:

	Lisa		TIMMONS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland		
(include Zip Code)	21209		

(6) INVENTOR'S SIGNATURE:

Date:

	Hiroaki		TABARA
	First	Middle Initial	Family Name
Residence	Worcester	Massachusetts	Japan
	City	State/Foreign Country	Country of Citizenship
Post Office Address	145 Orient Street, Apt. #1, Worcester, Massachusetts		
(include Zip Code)	01604		

(7) INVENTOR'S SIGNATURE: *X Sam D*

Date: *X 3/1/97*

	Samuel	E.	DRIVER
	First	Middle Initial	Family Name
Residence	Brighton	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	1714 Commonwealth Avenue, Apt. #4, Brighton, Massachusetts		
(include Zip Code)	02135		

(8) INVENTOR'S SIGNATURE:

Date:

	Craig	C.	MELLO
	First	Middle Initial	Family Name
Residence	Shrewsbury	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	19 Ryan Road, Shrewsbury, Massachusetts		
(include Zip Code)	01545		

(9) INVENTOR'S SIGNATURE:

Date:

	First	Middle Initial	Family Name
Residence			
	City	State/Foreign Country	Country of Citizenship
Post Office Address			
(include Zip Code)			



DECLARATION AND POWER OF ATTORNEY  
(continued)  
ADDITIONAL INVENTORS

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Date:

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	City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota		
(include Zip Code)	55105		

(4) INVENTOR'S SIGNATURE:

Date:

	Stephen	A.	KOSTAS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland		
(include Zip Code)	21212		

(5) INVENTOR'S SIGNATURE:

Date:

	Lisa		TIMMONS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland		
(include Zip Code)	21209		

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	Hiroaki		TABARA
	First	Middle Initial	Family Name
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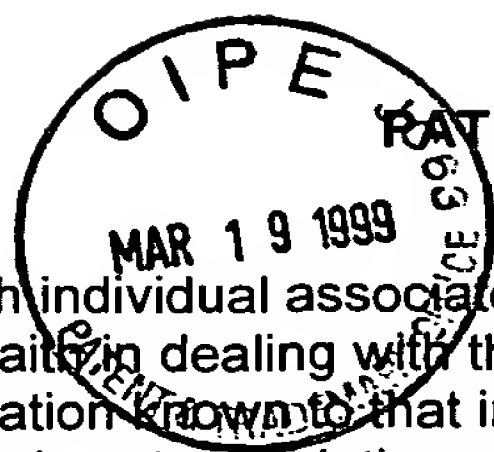
Date:

	Craig	C.	MELLO
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(include Zip Code)	01545		

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(include Zip Code)			



Rule 56(a) & (b) = 37 C.F.R. 1.56(a) & (b)  
**PATENT AND TRADEMARK CASES - RULES OF PRACTICE**  
**DUTY OF DISCLOSURE**

- (a) ... Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the [Patent and Trademark] Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability... (b) information is material to patentability when it is not cumulative and (1) It also establishes by itself, or in combination with other information, a prima facie case of unpatentability of a claim or (2) refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability

**PATENT LAWS 35 U.S.C.**

**§102. Conditions for patentability; novelty and loss of right to patent**

A person shall be entitled to a patent unless--

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months\* before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

**§103. Condition for patentability; non-obvious subject matter**

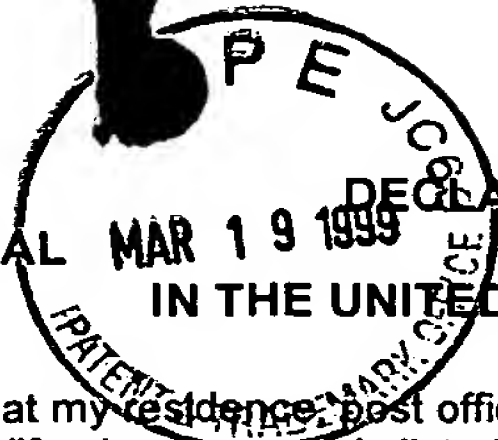
A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualified as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person

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\* Six months for Design Applications (35 U.S.C. 172).



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the specification of which (CHECK applicable BOX(ES))  
X → ☐ is attached hereto.  
BOX(ES) → ☒ was filed on December 18, 1998 as U.S. Application No. 215,257  
→ ☐ was filed as PCT International Application No. PCT/ / on

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<u>Number</u>	<u>Country</u>	<u>Day/MONTH/Year Filed</u>	<u>Date first Laid-open or Published</u>	<u>Date Patented or Granted</u>	<u>Priority Claimed</u> <u>Yes</u> <u>No</u>
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PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)

<u>Application No. (series code/serial no.)</u>	<u>Day/MONTH/Year Filed</u>	<u>Status</u> <u>pending, abandoned, patented</u>	<u>Priority Claimed</u> <u>Yes</u> <u>No</u>
60/068,562	23/DECEMBER/1997	pending	X

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George M. Sirilla	18221	Michelle N. Lester	32331	Ruth N. Morduch	31044		

(1) INVENTOR'S SIGNATURE:

Date:

Andrew		FIRE	
First	Middle Initial	Family Name	
Residence	Baltimore	Maryland	U.S.A.
City	State/Foreign Country		Country of Citizenship
Post Office Address	2320 Bright Leaf Way, Baltimore, Maryland		
(include Zip Code)	21210		

(2) INVENTOR'S SIGNATURE:

Date: 1/12/99

Siqun		XU	
First	Middle Initial	Family Name	
Residence	Ballwin	Missouri	China
City	State/Foreign Country		Country of Citizenship
Post Office Address	1755 Warmington Court, Ballwin, Missouri		
(include Zip Code)	63021		

(FOR ADDITIONAL INVENTORS, check box ☒ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)



## DECLARATION AND POWER OF ATTORNEY

(continued)

## ADDITIONAL INVENTORS

(3) INVENTOR'S SIGNATURE:

Date:

	Mary	K.	Montgomery
	First	Middle Initial	Family Name
Residence	St. Paul	Minnesota	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota		
(include Zip Code)	55105		

(4) INVENTOR'S SIGNATURE:

Date:

	Stephen	A.	KOSTAS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland		
(include Zip Code)	21212		

(5) INVENTOR'S SIGNATURE:

Date:

	Lisa		TIMMONS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland		
(include Zip Code)	21209		

(6) INVENTOR'S SIGNATURE:

Date:

	Hiroaki		TABARA
	First	Middle Initial	Family Name
Residence	Worcester	Massachusetts	Japan
	City	State/Foreign Country	Country of Citizenship
Post Office Address	145 Orient Street, Apt. #1, Worcester, Massachusetts		
(include Zip Code)	01604		

(7) INVENTOR'S SIGNATURE:

Date:

	Samuel	E.	DRIVER
	First	Middle Initial	Family Name
Residence	Brighton	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	1714 Commonwealth Avenue, Apt. #4, Brighton, Massachusetts		
(include Zip Code)	02135		

(8) INVENTOR'S SIGNATURE:

Date:

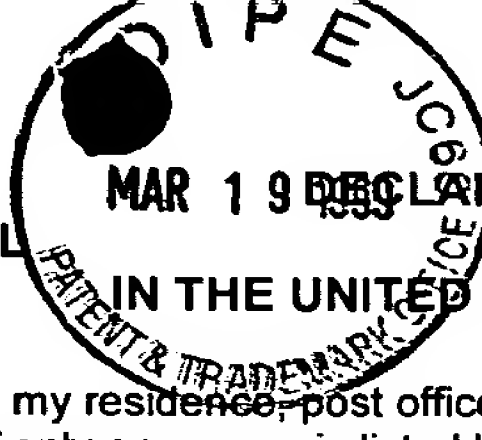
	Craig	C.	MELLO
	First	Middle Initial	Family Name
Residence	Shrewsbury	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	19 Ryan Road, Shrewsbury, Massachusetts		
(include Zip Code)	01545		

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Date:

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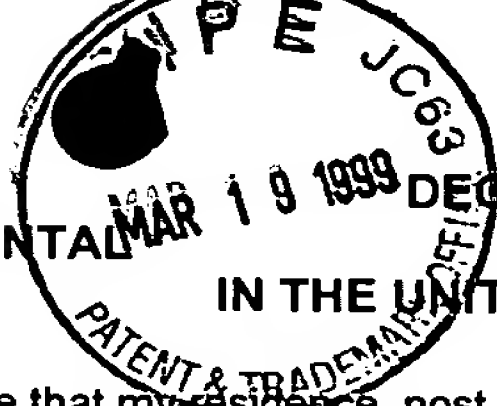
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First	Middle Initial	Family Name	
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PM & S  
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED GENETIC INHIBITION BY DOUBLE-STRANDED RNA

the specification of which (CHECK applicable BOX(ES))  
X → ☐ is attached hereto.  
BOX(ES) → ☒ was filed on December 18, 1998 as U.S. Application No. 09/ 215,257  
→ ☐ was filed as PCT International Application No. PCT/ / on

and (if applicable to U.S. or PCT application) was amended on  
I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S)		Date first Laid-	Date Patented	Priority Claimed	
Number	Country	Day/MONTH/Year Filed	open or Published	or Granted	Yes No

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)		Status	Priority Claimed
Application No. (series code/serial no.)	Day/MONTH/Year Filed	pending, abandoned, patented	Yes No
60/068,562	23/DECEMBER/1997	pending	X

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

Paul N. Kokulis	16773	David W. Brinkman	20817	G. Paul Edgell	24238	Richard H. Zaitlen	27248
Raymond F. Lippitt	17519	Donald J. Bird	25323	Lynn E. Eccleston	35861	Roger R. Wise	31204
G. Lloyd Knight	17698	Peter W. Gowdey	25872	Timothy J. Klima	34852	Jay M. Finkelstein	21082
Carl G. Love	18781	Dale S. Lazar	28872	David A. Jakopin	32995	Anita M. Kirkpatrick	32617
Edgar H. Martin	20534	Paul E. White, Jr.	32011	Mark G. Paulson	30793	Michael R. Dzwonczyk	36787
William K. West, Jr.	22057	Glenn J. Perry	28458	Stephen C. Glazier	31361	W. Patrick Bengtsson	32456
Kevin E. Joyce	20508	Kendrew H. Colton	30368	Paul F. McQuade	31542		
George M. Sirilla	18221	Michelle N. Lester	32331	Ruth N. Morduch	31044		

(1) INVENTOR'S SIGNATURE:

Date:

Andrew		FIRE	
First	Middle Initial	Family Name	
Residence	Baltimore	Maryland	U.S.A.
City	State/Foreign Country		Country of Citizenship
Post Office Address	2320 Bright Leaf Way, Baltimore, Maryland		
(include Zip Code)	21210		

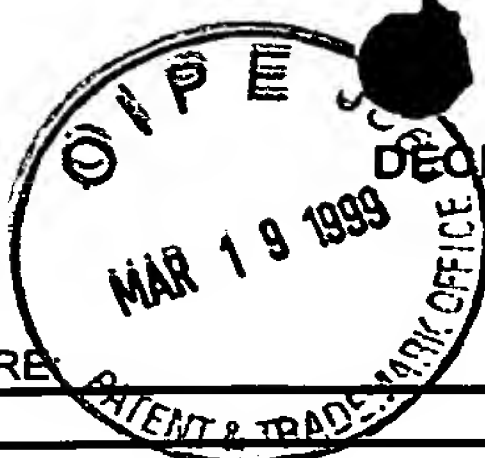
(2) INVENTOR'S SIGNATURE:

Date:

Si		XU	
First	Middle Initial	Family Name	
Residence	Ballwin	Missouri	China
City	State/Foreign Country		Country of Citizenship
Post Office Address	1755 Warmington Court, Ballwin, Missouri		
(include Zip Code)	63021		

(FOR ADDITIONAL INVENTORS, check box ☒ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)





## DECLARATION AND POWER OF ATTORNEY

(continued)

## ADDITIONAL INVENTORS

(3) INVENTOR'S SIGNATURE:

Date:

	Mary	K.	Montgomery
	First	Middle Initial	Family Name
Residence	St. Paul	Minnesota	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota		
(include Zip Code)	55105		

(4) INVENTOR'S SIGNATURE:

Date:

	Stephen	A.	KOSTAS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland		
(include Zip Code)	21212		

(5) INVENTOR'S SIGNATURE:

Date:

	Lisa	D. J.	TIMMONS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland		
(include Zip Code)	21209		

*Judith Catullo - Witness*

(6) INVENTOR'S SIGNATURE:

Date:

	Hiroaki		TABARA
	First	Middle Initial	Family Name
Residence	Worcester	Massachusetts	Japan
	City	State/Foreign Country	Country of Citizenship
Post Office Address	145 Orient Street, Apt. #1, Worcester, Massachusetts		
(include Zip Code)	01604		

(7) INVENTOR'S SIGNATURE:

Date:

	Samuel	E.	DRIVER
	First	Middle Initial	Family Name
Residence	Brighton	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	1714 Commonwealth Avenue, Apt. #4, Brighton, Massachusetts		
(include Zip Code)	02135		

(8) INVENTOR'S SIGNATURE:

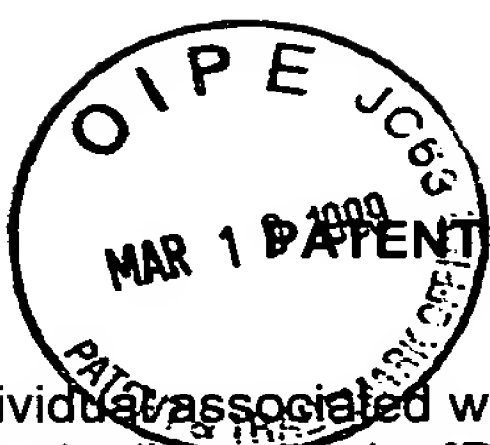
Date:

	Craig	C.	MELLO
	First	Middle Initial	Family Name
Residence	Shrewsbury	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	19 Ryan Road, Shrewsbury, Massachusetts		
(include Zip Code)	01545		

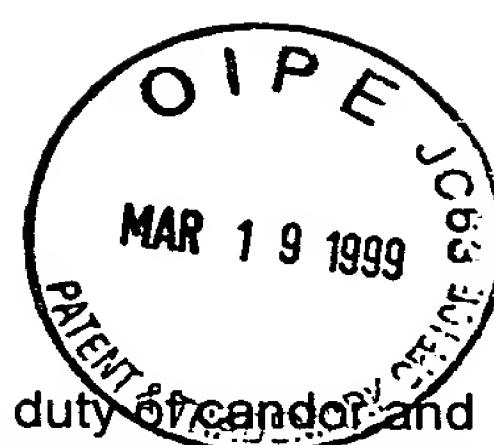
(9) INVENTOR'S SIGNATURE:

Date:

	First	Middle Initial	Family Name
Residence			
	City	State/Foreign Country	Country of Citizenship
Post Office Address			
(include Zip Code)			



Rule 56(a) & (b) = 37 C.F.R. 1.56(a) & (b)  
**PATENT AND TRADEMARK CASES - RULES OF PRACTICE**  
**DUTY OF DISCLOSURE**



- (a) ... Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the [Patent and Trademark] Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability... (b) information is material to patentability when it is not cumulative and (1) It also establishes by itself, or in combination with other information, a prima facie case of unpatentability of a claim or (2) refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability

**PATENT LAWS 35 U.S.C.**

**§102. Conditions for patentability; novelty and loss of right to patent**

A person shall be entitled to a patent unless--

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months\* before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

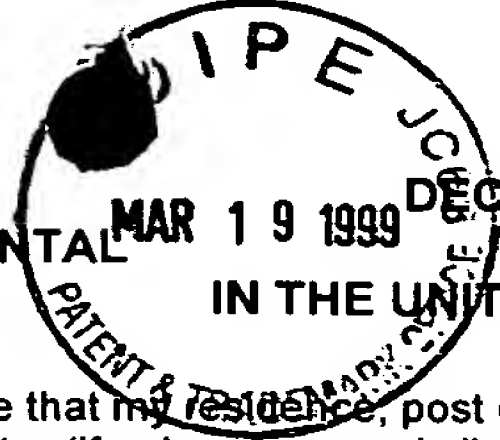
**§103. Condition for patentability; non-obvious subject matter**

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualified as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person

---

\* Six months for Design Applications (35 U.S.C. 172).

FOR UTILITY/DESIGN  
CIP/PCT NATIONAL/PLANT  
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL  
DECLARATIONS



RULE 63 (37 C.F.R. 1.61)  
DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S  
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED GENETIC INHIBITION BY DOUBLE-STRANDED RNA

the specification of which (CHECK applicable BOX(ES) )  
X → ☐ is attached hereto.  
BOX(ES) → ☒ was filed on December 18, 1998 as U.S. Application No. 09/215,257  
→ ☐ was filed as PCT International Application No. PCT/ / on

and (if applicable to U.S. or PCT application) was amended on

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

<u>PRIOR FOREIGN APPLICATION(S)</u>	<u>Date first Laid-</u>	<u>Date Patented</u>	<u>Priority Claimed</u>
<u>Number</u>	<u>Country</u>	<u>open or Published</u>	<u>Yes</u> <u>No</u>

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

<u>PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)</u>	<u>Status</u>	<u>Priority Claimed</u>	
<u>Application No. (series code/serial no.)</u>	<u>Day/MONTH/Year Filed</u>	<u>pending, abandoned, patented</u>	<u>Yes</u> <u>No</u>
60/068,562	23/DECEMBER/1997	pending	X

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

Paul N. Kokulis	16773	David W. Brinkman	20817	G. Paul Edgell	24238	Richard H. Zaitlen	27248
Raymond F. Lippitt	17519	Donald J. Bird	25323	Lynn E. Eccleston	35861	Roger R. Wise	31204
G. Lloyd Knight	17698	Peter W. Gowdey	25872	Timothy J. Klima	34852	Jay M. Finkelstein	21082
Carl G. Love	18781	Dale S. Lazar	28872	David A. Jakopin	32995	Anita M. Kirkpatrick	32617
Edgar H. Martin	20534	Paul E. White, Jr.	32011	Mark G. Paulson	30793	Michael R. Dzwonczyk	36787
William K. West, Jr.	22057	Glenn J. Perry	28458	Stephen C. Glazier	31361	W. Patrick Bengtsson	32456
Kevin E. Joyce	20508	Kendrew H. Colton	30368	Paul F. McQuade	31542		
George M. Sirilla	18221	Michelle N. Lester	32331	Ruth N. Morduch	31044		

(1) INVENTOR'S SIGNATURE:

Date:

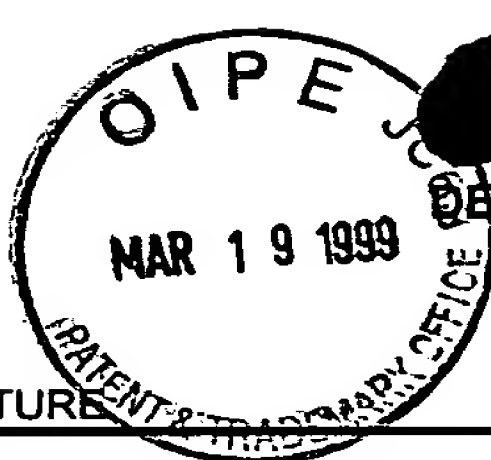
Andrew		FIRE	
First	Middle Initial	Family Name	
Residence	Baltimore	Maryland	U.S.A.
City	State/Foreign Country		Country of Citizenship
Post Office Address	2320 Bright Leaf Way, Baltimore, Maryland		
(include Zip Code)	21210		

(2) INVENTOR'S SIGNATURE:

Date:

Si		XU	
First	Middle Initial	Family Name	
Residence	Ballwin	Missouri	China
City	State/Foreign Country		Country of Citizenship
Post Office Address	1755 Warmington Court, Ballwin, Missouri		
(include Zip Code)	63021		

(FOR ADDITIONAL INVENTORS, check box ☒ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)



DECLARATION AND POWER OF ATTORNEY  
(continued)  
ADDITIONAL INVENTORS

(3) INVENTOR'S SIGNATURE:

Date:

	Mary	K.	Montgomery
	First	Middle Initial	Family Name
Residence	St. Paul	Minnesota	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota		
(include Zip Code)	55105		

(4) INVENTOR'S SIGNATURE:

Date:

	Stephen	A.	KOSTAS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland		
(include Zip Code)	21212		

(5) INVENTOR'S SIGNATURE:

Date:

	Lisa		TIMMONS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland		
(include Zip Code)	21209		

(6) INVENTOR'S SIGNATURE:

Date:

	Hiroaki		TABARA
	First	Middle Initial	Family Name
Residence	Worcester	Massachusetts	Japan
	City	State/Foreign Country	Country of Citizenship
Post Office Address	145 Orient Street, Apt. #1, Worcester, Massachusetts		
(include Zip Code)	01604		

(7) INVENTOR'S SIGNATURE:

Date:

	Samuel	E.	DRIVER
	First	Middle Initial	Family Name
Residence	Brighton	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	1714 Commonwealth Avenue, Apt. #4, Brighton, Massachusetts		
(include Zip Code)	02135		

(8) INVENTOR'S SIGNATURE:

Date:

	Craig	C.	MELLO
	First	Middle Initial	Family Name
Residence	Shrewsbury	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	19 Ryan Road, Shrewsbury, Massachusetts		
(include Zip Code)	01545		

(9) INVENTOR'S SIGNATURE:

Date:

	First	Middle Initial	Family Name
Residence			
	City	State/Foreign Country	Country of Citizenship
Post Office Address			
(include Zip Code)			



Rule 56(a) & (b) = 37 C.F.R. 1.56(a) & (b)  
**PATENT AND TRADEMARK CASES - RULES OF PRACTICE**  
**DUTY OF DISCLOSURE**



- (a) ...Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the [Patent and Trademark] Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability... (b) information is material to patentability when it is not cumulative and (1) It also establishes by itself, or in combination with other information, a prima facie case of unpatentability of a claim or (2) refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability

**PATENT LAWS 35 U.S.C.**

**§102. Conditions for patentability; novelty and loss of right to patent**

A person shall be entitled to a patent unless--

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months\* before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

**§103. Condition for patentability; non-obvious subject matter**

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualified as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person

---

\* Six months for Design Applications (35 U.S.C. 172).

FOR UTILITY/DESIGN  
CIP/PCT NATIONAL/PLANT  
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL  
DECLARATIONS

RULE 63 (37 C.F.R. 1.63)  
DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S  
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED GENETIC INHIBITION BY DOUBLE-STRANDED RNA

the specification of which (CHECK applicable BOX(ES) )  
X → ☐ is attached hereto.  
BOX(ES) → ☒ was filed on December 18, 1998 as U.S. Application No. 09/ 215,257  
→ ☐ was filed as PCT International Application No. PCT/ / on

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I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S)					
Number	Country	Day/MONTH/Year Filed	Date first Laid-open or Published	Date Patented or Granted	Priority Claimed Yes No

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

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Application No. (series code/serial no.)	Day/MONTH/Year Filed	Status pending, abandoned, patented	Priority Claimed Yes No	
60/068,562	23/DECEMBER/1997	pending	X	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

Paul N. Kokulis	16773	David W. Brinkman	20817	G. Paul Edgell	24238	Richard H. Zaitlen	27248
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Edgar H. Martin	20534	Paul E. White, Jr.	32011	Mark G. Paulson	30793	Michael R. Dzwonczyk	36787
William K. West, Jr.	22057	Glenn J. Perry	28458	Stephen C. Glazier	31361	W. Patrick Bengtsson	32456
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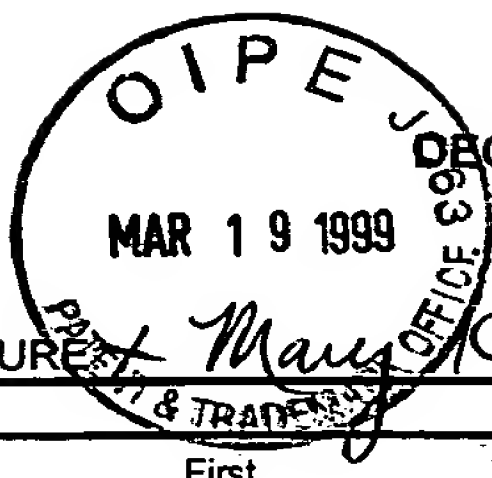
(1) INVENTOR'S SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_

Andrew	FIRE		
First	Middle Initial	Family Name	
Residence	Baltimore	Maryland	U.S.A.
City	State/Foreign Country	Country of Citizenship	
Post Office Address	2320 Bright Leaf Way, Baltimore, Maryland		
(include Zip Code)	21210		

(2) INVENTOR'S SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_

Si	Q.	XU	
First	Middle Initial	Family Name	
Residence	Ballwin	Missouri	China
City	State/Foreign Country	Country of Citizenship	
Post Office Address	1755 Warmington Court, Ballwin, Missouri		
(include Zip Code)	63021		

(FOR ADDITIONAL INVENTORS, check box ☒ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)



## DECLARATION AND POWER OF ATTORNEY

(continued)

## ADDITIONAL INVENTORS

(3) INVENTOR'S SIGNATURE:

Date: 1/29/99

Mary	K.	Montgomery
First	Middle Initial	Family Name
Residence	St. Paul	Minnesota
City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota	
(include Zip Code)	55105	

(4) INVENTOR'S SIGNATURE:

Date:

Stephen	A.	KOSTAS
First	Middle Initial	Family Name
Residence	Baltimore	Maryland
City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland	
(include Zip Code)	21212	

(5) INVENTOR'S SIGNATURE:

Date:

Lisa		TIMMONS
First	Middle Initial	Family Name
Residence	Baltimore	Maryland
City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland	
(include Zip Code)	21209	

(6) INVENTOR'S SIGNATURE:

Date:

Hiroaki		TABARA
First	Middle Initial	Family Name
Residence	Worcester	Massachusetts
City	State/Foreign Country	Country of Citizenship
Post Office Address	145 Orient Street, Apt. #1, Worcester, Massachusetts	
(include Zip Code)	01604	

(7) INVENTOR'S SIGNATURE:

Date:

Samuel	E.	DRIVER
First	Middle Initial	Family Name
Residence	Brighton	Massachusetts
City	State/Foreign Country	Country of Citizenship
Post Office Address	1714 Commonwealth Avenue, Apt. #4, Brighton, Massachusetts	
(include Zip Code)	02135	

(8) INVENTOR'S SIGNATURE:

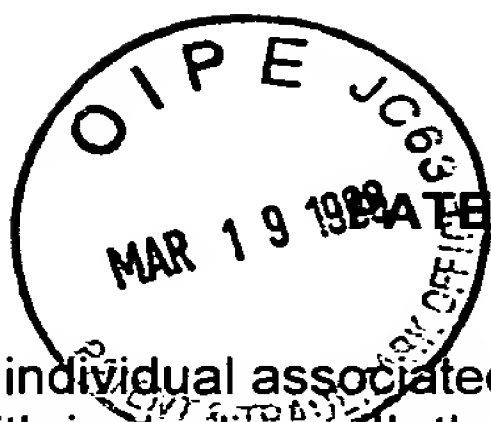
Date:

Craig	C.	MELLO
First	Middle Initial	Family Name
Residence	Shrewsbury	Massachusetts
City	State/Foreign Country	Country of Citizenship
Post Office Address	19 Ryan Road, Shrewsbury, Massachusetts	
(include Zip Code)	01545	

(9) INVENTOR'S SIGNATURE:

Date:

First	Middle Initial	Family Name
Residence		
City	State/Foreign Country	Country of Citizenship
Post Office Address		
(include Zip Code)		



**Rule 56(a) & (b) = 37 C.F.R. 1.56(a) & (b)**

**PATENT AND TRADEMARK CASES - RULES OF PRACTICE  
DUTY OF DISCLOSURE**

- (a) ... Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the [Patent and Trademark] Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability... (b) information is material to patentability when it is not cumulative and (1) It also establishes by itself, or in combination with other information, a prima facie case of unpatentability of a claim or (2) refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability

**PATENT LAWS 35 U.S.C.**

**§102. Conditions for patentability; novelty and loss of right to patent**

A person shall be entitled to a patent unless--

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months\* before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

**§103. Condition for patentability; non-obvious subject matter**

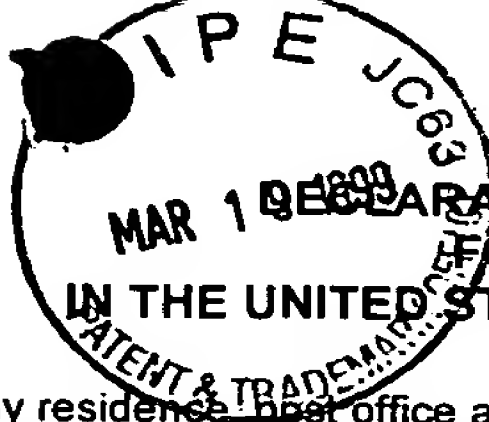
A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualified as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person

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\* Six months for Design Applications (35 U.S.C. 172).



FOR UTILITY/DESIGN  
CIP/PCT NATIONAL/PLANT  
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL  
DECLARATIONS



RULE 63 (37 C.F.R. 1.63)  
DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PM & S  
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED GENETIC INHIBITION BY DOUBLE-STRANDED RNA

the specification of which (CHECK applicable BOX(ES))  
X → ☐ is attached hereto.  
BOX(ES) → ☒ was filed on December 18, 1998 as U.S. Application No. 09/ 215,257  
→ ☐ was filed as PCT International Application No. PCT/ / on  
and (if applicable to U.S. or PCT application) was amended on

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S)		Day/MONTH/Year Filed	Date first Laid-open or Published	Date Patented or Granted	Priority Claimed	
Number	Country				Yes	No

I hereby claim domestic priority benefit under 35 U.S.C. 119/120/365 of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)			Status pending, abandoned, patented	Priority Claimed	
Application No. (series code/serial no.)	Day/MONTH/Year Filed			Yes	No
60/068,562	23/DECEMBER/1997		pending	X	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

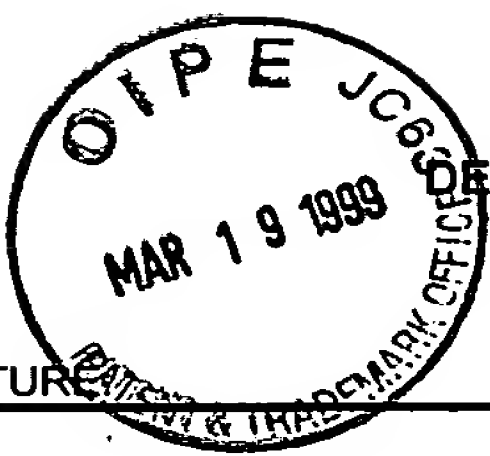
And I hereby appoint Pillsbury Madison & Sutro LLP, Intellectual Property Group, 1100 New York Avenue, N.W., Ninth Floor, East Tower, Washington, D.C. 20005-3918, telephone number (202) 861-3000 (to whom all communications are to be directed), and the below-named persons (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete names/numbers below of persons no longer with their firm and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or a below attorney in writing to the contrary.

Paul N. Kokulis	16773	David W. Brinkman	20817	G. Paul Edgell	24238	Richard H. Zaitlen	27248
Raymond F. Lippitt	17519	Donald J. Bird	25323	Lynn E. Eccleston	35861	Roger R. Wise	31204
G. Lloyd Knight	17698	Peter W. Gowdey	25872	Timothy J. Klima	34852	Jay M. Finkelstein	21082
Carl G. Love	18781	Dale S. Lazar	28872	David A. Jakopin	32995	Anita M. Kirkpatrick	32617
Edgar H. Martin	20534	Paul E. White, Jr.	32011	Mark G. Paulson	30793	Michael R. Dzwonczyk	36787
William K. West, Jr.	22057	Glenn J. Perry	28458	Stephen C. Glazier	31361	W. Patrick Bengtsson	32456
Kevin E. Joyce	20508	Kendrew H. Colton	30368	Paul F. McQuade	31542		
George M. Sirilla	18221	Michelle N. Lester	32331	Ruth N. Morduch	31044		

(1) INVENTOR'S SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_  
Andrew \_\_\_\_\_ FIRE \_\_\_\_\_  
First \_\_\_\_\_ Middle Initial \_\_\_\_\_ Family Name \_\_\_\_\_  
Residence Baltimore \_\_\_\_\_ Maryland \_\_\_\_\_ U.S.A. \_\_\_\_\_  
City \_\_\_\_\_ State/Foreign Country \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
Post Office Address 2320 Bright Leaf Way, Baltimore, Maryland  
(include Zip Code) 21210

(2) INVENTOR'S SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_  
Si \_\_\_\_\_ Q. \_\_\_\_\_ XU \_\_\_\_\_  
First \_\_\_\_\_ Middle Initial \_\_\_\_\_ Family Name \_\_\_\_\_  
Residence Ballwin \_\_\_\_\_ Missouri \_\_\_\_\_ China \_\_\_\_\_  
City \_\_\_\_\_ State/Foreign Country \_\_\_\_\_ Country of Citizenship \_\_\_\_\_  
Post Office Address 1755 Warmington Court, Ballwin, Missouri  
(include Zip Code) 63021

(FOR ADDITIONAL INVENTORS, check box ☒ to attach PAT 116-2 same information for each re signature, name, date, citizenship, residence and address.)



DECLARATION AND POWER OF ATTORNEY  
(continued)  
ADDITIONAL INVENTORS

(3) INVENTOR'S SIGNATURE:

Date:

	Mary	K.	Montgomery
	First	Middle Initial	Family Name
Residence	St. Paul	Minnesota	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	233 Macalester Street, St. Paul, Minnesota		
(include Zip Code)	55105		

(4) INVENTOR'S SIGNATURE:

Date:

	Stephen	A.	KOSTAS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	126 East Melrose Avenue, Baltimore, Maryland		
(include Zip Code)	21212		

(5) INVENTOR'S SIGNATURE:

Date:

	Lisa		TIMMONS
	First	Middle Initial	Family Name
Residence	Baltimore	Maryland	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	2408 Brambleton Road, Baltimore, Maryland		
(include Zip Code)	21209		

(6) INVENTOR'S SIGNATURE:

Date:

	Hiroaki		TABARA
	First	Middle Initial	Family Name
Residence	Worcester	Massachusetts	Japan
	City	State/Foreign Country	Country of Citizenship
Post Office Address	145 Orient Street, Apt. #1, Worcester, Massachusetts		
(include Zip Code)	01604		

(7) INVENTOR'S SIGNATURE:

Date:

	Samuel	E.	DRIVER
	First	Middle Initial	Family Name
Residence	Brighton	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	1714 Commonwealth Avenue, Apt. #4, Brighton, Massachusetts		
(include Zip Code)	02135		

(8) INVENTOR'S SIGNATURE:

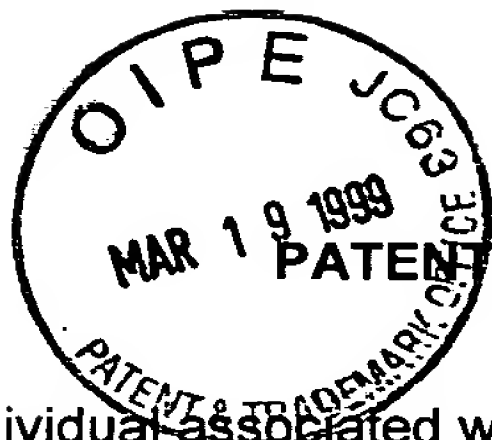
Date:

	Craig	C.	MELLO
	First	Middle Initial	Family Name
Residence	Shrewsbury	Massachusetts	U.S.A.
	City	State/Foreign Country	Country of Citizenship
Post Office Address	19 Ryan Road, Shrewsbury, Massachusetts		
(include Zip Code)	01545		

(9) INVENTOR'S SIGNATURE:

Date:

	First	Middle Initial	Family Name
Residence			
	City	State/Foreign Country	Country of Citizenship
Post Office Address			
(include Zip Code)			



Rule 56(a) & (b) = 37 C.F.R. 1.56(a) & (b)  
**PATENT AND TRADEMARK CASES - RULES OF PRACTICE**  
**DUTY OF DISCLOSURE**

- (a) ...Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the [Patent and Trademark] Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability... (b) information is material to patentability when it is not cumulative and (1) It also establishes by itself, or in combination with other information, a prima facie case of unpatentability of a claim or (2) refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability

**PATENT LAWS 35 U.S.C.**

**§102. Conditions for patentability; novelty and loss of right to patent**

A person shall be entitled to a patent unless--

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months\* before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

**§103. Condition for patentability; non-obvious subject matter**

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualified as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person

---

\* Six months for Design Applications (35 U.S.C. 172).

Inventor(s): FIRE et al.

Appln. No.: 09/ 215,257

or Patent No.:

Filed: December 18, 1998

or Issued.:

Atty. Dkt.

PMS 256628 /

M# / Client Ref.

Title: Genetic Inhibition by Double-Stranded RNA

SMALL ENTITY STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) and 1.27 (b)) - **NONPROFIT ORGANIZATION**

I hereby state that I am an official empowered to act on behalf of the nonprofit organization identified below.

NAME OF ORGANIZATION The Carnegie Institution of Washington

ADDRESS OF ORGANIZATION 1530 P Street, N.W., Washington, DC 20005

TYPE OF ORGANIZATION

☐ UNIVERSITY OR OTHER INSTITUTION OF HIGHER EDUCATION

☒ TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 USC 501(a) AND 501(c)(3))

☐ NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)

☐ WOULD QUALIFY AS TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 USC 501(a) AND 501(c)(3)) IF  
LOCATED IN THE UNITED STATES OF AMERICA

☐ WOULD QUALIFY AS NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED  
STATES OF AMERICA IF LOCATED IN THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)

**I hereby state** that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.9(e) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, with regard to the invention **entitled as above, invented by the above inventor(s)** and described in

x → ☐ the specification filed herewith

one → ☒ Application No. 09/ 215,257, filed December 18, 1998

box → ☐ Patent No. \_\_\_\_\_, issued

**I hereby state** that rights under contract or law have been conveyed to and remain with the nonprofit organization with regard to the above identified invention.

If the rights held by the nonprofit organization are not exclusive, each small entity individual, concern or organization having rights to the invention is listed below in (A) and (B) and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

(A) FULL NAME of assignee/licensee/grantee/conveyee\* The University of Massachusetts

ADDRESS One Beacon Street, Boston, MA 02108

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☒ NONPROFIT ORGANIZATION

(B) FULL NAME of assignee/licensee/grantee/conveyee\*

ADDRESS

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

\*NOTE: Separate statement is required from each person, concern or organization named in (A) and (B) above having rights to the invention, averring to his/her/its status as a small entity. (37 CFR 1.27)

I acknowledge the duty to file, in this case, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

NAME OF PERSON SIGNING x John J. Lively

TITLE IN ORGANIZATION x Director of Administration and Finance

ADDRESS OF PERSON SIGNING x 1530 P Street, N.W., Washington, D.C. 20005

SIGNATURE x John J. Lively

DATE x January 6, 1999



Inventor(s): FIRE et al. Atty. Dkt. PMS 256628 /  
Appln. No.: 09/ 215,257 or Patent No.: \_\_\_\_\_  
Filed: December 18, 1998 or Issued.: \_\_\_\_\_ M# / Client Ref.  
Title: Genetic Inhibition by Double-Stranded RNA

SMALL ENTITY STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) and 1.27 (b)) - **NONPROFIT ORGANIZATION**

I hereby state that I am an official empowered to act on behalf of the nonprofit organization identified below.

NAME OF ORGANIZATION The University of Massachusetts  
ADDRESS OF ORGANIZATION One Beacon Street, Boston, MA 02108  
TYPE OF ORGANIZATION

- ☒ UNIVERSITY OR OTHER INSTITUTION OF HIGHER EDUCATION  
☐ TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 USC 501(a) AND 501(c)(3))  
☐ NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)  
☐ WOULD QUALIFY AS TAX EXEMPT UNDER INTERNAL REVENUE SERVICE CODE (26 USC 501(a) AND 501(c)(3)) IF  
LOCATED IN THE UNITED STATES OF AMERICA  
☐ WOULD QUALIFY AS NONPROFIT SCIENTIFIC OR EDUCATIONAL UNDER STATUTE OF STATE OF THE UNITED  
STATES OF AMERICA IF LOCATED IN THE UNITED STATES OF AMERICA  
(NAME OF STATE \_\_\_\_\_)  
(CITATION OF STATUTE \_\_\_\_\_)

**I hereby state** that the nonprofit organization identified above qualifies as a nonprofit organization as defined in 37 CFR 1.9(e) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, with regard to the invention **entitled as above, invented by the above inventor(s)** and described in

x → ☐ the specification filed herewith  
one → ☒ Application No. 09/ 215,257, filed December 18, 1998  
box → ☐ Patent No. \_\_\_\_\_, issued

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(A) FULL NAME of assignee/licensee/grantee/conveyee\* The Carnegie Institution of Washington  
ADDRESS 1530 P Street, N.W. Boston, DC 20005  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☒ NONPROFIT ORGANIZATION

(B) FULL NAME of assignee/licensee/grantee/conveyee\*  
ADDRESS  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

\*NOTE: Separate statement is required from each person, concern or organization named in (A) and (B) above having rights to the invention, averring to his/her/its status as a small entity. (37 CFR 1.27)

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NAME OF PERSON SIGNING x Joseph F.X. McGuirl  
TITLE IN ORGANIZATION x Joseph F.X. McGuirl  
ADDRESS OF PERSON SIGNING x University of Massachusetts, 55 Lake Ave N Worcester MA  
SIGNATURE x Joseph F.X. McGuirl DATE x 4 JAN 99

Rule 56(a) & (b) = 37 C.F.R. 1.56(a) & (b)  
**PATENT AND TRADEMARK CASES - RULES OF PRACTICE**  
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**PATENT LAWS 35 U.S.C.**

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- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or
- (c) he has abandoned the invention, or
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months\* before the filing of the application in the United States, or
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or
- (f) he did not himself invent the subject matter sought to be patented, or
- (g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

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---

\* Six months for Design Applications (35 U.S.C. 172).